Notice of Allowability    10/690,137		Applicant(s)	cation No.	Ap	
Notice of Allowability  Examiner Daniel Kim		ASHED ET AL	0.127	10/	Ye
- The MAILING DATE of this communication appears on the cover sheet with the correspondence address-All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-95) or other appropriate communication will be mailed in due course. NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS. This application is subject to withdrawal from issue at the of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.  1. ☑ This communication is responsive to 4/27/07.  2. ☑ The allowed claim(s) is/are 1-9, 13-15 and 19-24 (renumbered as 1-18).  3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) ☐ All b) ☐ Some* c) ☐ None of the:  1. ☐ Certified copies of the priority documents have been received.  2. ☐ Certified copies of the priority documents have been received in Application No.  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application fror International Bureau (PCT Rule 17.2(a)).  * Certified copies not received:  Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requiremented below. Failure to timely comply will result in ABANDONMENT of this application.  THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.  4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.  (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached Examiner's comment or in the Office action of Paper No./Mail Date					Notice of Allowability
- The MAILING DATE of this communication appears on the cover sheet with the correspondence address-All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-95) or other appropriate communication will be mailed in due course. NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS. This application is subject to withdrawal from issue at the of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.  1. ☑ This communication is responsive to 4/27/07.  2. ☑ The allowed claim(s) is/are 1-9, 13-15 and 19-24 (renumbered as 1-18).  3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) ☐ All b) ☐ Some* c) ☐ None of the:  1. ☐ Certified copies of the priority documents have been received.  2. ☐ Certified copies of the priority documents have been received in Application No.  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application fror International Bureau (PCT Rule 17.2(a)).  * Certified copies not received:  Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requiremented below. Failure to timely comply will result in ABANDONMENT of this application.  THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.  4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.  (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached Examiner's comment or in the Office action of Paper No./Mail Date		0405			
All daims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTO-1-85) or other appropriate communication with mailed in due course. NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS. This application is subject to withdrawal from issue at the of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.  1. ② This communication is responsive to 4/27/07.  2. ② The allowed claim(s) is/are 1-9, 13-15 and 19-24 (renumbered as 1-18).  3. □ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) □ All b) □ Some* c) □ None of the:  1. □ Certified copies of the priority documents have been received.  2. □ Certified copies of the priority documents have been received in Application No.  3. □ Copies of the certified copies of the priority documents have been received in this national stage application fror International Bureau (PCT Rule 17.2(a)).  * Certified copies not received:  Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requireme noted below. Failure to timely comply will result in ABANDONMENT of this application.  THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.  4. □ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.  5. □ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.  (a) □ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached  1) □ hereto or 2) □ to Paper No./Mail Date  (b) □ including changes required by the Allowable Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date  (c) □ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOG		2185	l Kim	Dai	
2. Attachment(s) is/are 1-9, 13-15 and 19-24 (renumbered as 1-18).  3. Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) All b) Some* c) None of the:  1. Certified copies of the priority documents have been received.  2. Certified copies of the priority documents have been received in Application No.  3. Copies of the certified copies of the priority documents have been received in this national stage application fror International Bureau (PCT Rule 17.2(a)).  **Certified copies not received:**  Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requireme noted below. Failure to timely comply will result in ABANDONMENT of this application.  THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.  4. A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.  5. CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.  (a) including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached  1) hereto or 2) to Paper No./Mail Date  (b) including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date  (b) including changes required by the attached Examiner's Amendment on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).  6. DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.  Attachment(s)  1. Notice of References Cited (PTO-892)  5. Notice of Informal Patent Application  6. Interview Summary (PTO-413), Paper No./Mail Date  7. Examiner's Amendment/Comment	l ourse. THIS	oplication. If not include n will be mailed in due o	EMAINS) CLOSED in this apper appropriate communication This application is subject to	TS IS (OR L-85) or of NT RIGHT	All claims being allowable, PROSECUTION ON THE MERITS IS nerewith (or previously mailed), a Notice of Allowance (PTOL-85 NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT F
3. Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) All b) Some* c) None of the:  1. Certified copies of the priority documents have been received.  2. Certified copies of the priority documents have been received in Application No.  3. Copies of the certified copies of the priority documents have been received in this national stage application fror International Bureau (PCT Rule 17.2(a)).  **Certified copies not received:  Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requireme noted below. Failure to timely comply will result in ABANDOMMENT of this application. THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.  4. A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.  5. CORRECTED DRAWINGS (as "replacement sheets") must be submitted.  (a) including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached  1) hereto or 2) to Paper No./Mail Date  (b) including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date  (c) including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date  (d) including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date  (e) DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.  Attachment(s)  1. Notice of References Cited (PTO-892)  2. Notice of Parfiperson's Patent Drawing Review (PTO-948)  3. Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date  Paper No./Mail Date					. $\boxtimes$ This communication is responsive to $4/27/07$ .
a) All b) Some* c) None of the:  1. Certified copies of the priority documents have been received.  2. Certified copies of the priority documents have been received in Application No.  3. Copies of the certified copies of the priority documents have been received in this national stage application from International Bureau (PCT Rule 17.2(a)).  *Certified copies not received:  Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requiremented below. Failure to timely comply will result in ABANDONMENT of this application.  THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.  4. A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.  5. CORRECTED DRAWINGS (as "replacement sheets") must be submitted.  (a) including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached  1) hereto or 2) to Paper No./Mail Date  (b) including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date  (deathfying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).  6. DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.  Attachment(s)  1. Notice of Pafferences Cited (PTO-892)  5. Notice of Informal Patent Application  6. Interview Summary (PTO-413), Paper No./Mail Date  7. Examiner's Amendment/Comment  Paper No./Mail Date			<u>1-18)</u> .	numbered i	2. ☑ The allowed claim(s) is/are <u>1-9, 13-15 and 19-24 (renumb</u>
noted below. Failure to timely comply will result in ABANDONMENT of this application. THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.  4. A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.  5. CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.  (a) including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached  1) hereto or 2) to Paper No./Mail Date  (b) including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date  Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).  6. DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.  Attachment(s)  1. Notice of Draftperson's Patent Drawing Review (PTO-948)  3. Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date  7. Examiner's Amendment/Comment Paper No./Mail Date	on from the		received. received in Application No	s have bee s have bee ity docume	a) All b) Some* c) None of the:  1. Certified copies of the priority documents have 2. Certified copies of the priority documents have 3. Copies of the certified copies of the priority documents have a linternational Bureau (PCT Rule 17.2(a)).
INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.  5.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.  (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached  1)  hereto or 2) to Paper No./Mail Date  (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date  Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).  6.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.  Attachment(s)  1.  Notice of Praftperson's Patent Drawing Review (PTO-948)  3.  Notice of Draftperson's Patent Drawing Review (PTO-948)  3.  Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date  7.  Examiner's Amendment/Comment	irements	complying with the req			noted below. Failure to timely comply will result in ABANDON
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached  1) ☐ hereto or 2) ☐ to Paper No./Mail Date  (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date  Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).  6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.  Attachment(s)  1. ☐ Notice of References Cited (PTO-892)  2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)  3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date  7. ☐ Examiner's Amendment/Comment	TICE OF				
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached  1) ☐ hereto or 2) ☐ to Paper No./Mail Date  (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date  Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).  6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.  Attachment(s)  1. ☐ Notice of References Cited (PTO-892)  2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)  3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date  7. ☐ Examiner's Amendment/Comment			bmitted.	") must be	5. CORRECTED DRAWINGS ( as "replacement sheets") mu
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date  Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).  6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.  Attachment(s)  1. ☐ Notice of References Cited (PTO-892)  2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)  3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date  7. ☐ Examiner's Amendment/Comment		-948) attached		-	
Paper No./Mail Date  Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).  6. DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.  Attachment(s)  1. Notice of References Cited (PTO-892)  2. Notice of Draftperson's Patent Drawing Review (PTO-948)  3. Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date  7. Examiner's Amendment/Comment				•	1)  hereto or 2)  to Paper No./Mail Date
each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).  6. DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.  Attachment(s)  1. Notice of References Cited (PTO-892)  2. Notice of Draftperson's Patent Drawing Review (PTO-948)  3. Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date  7. Examiner's Amendment/Comment		Office action of	dment / Comment or in the C	niner's Am	· · · · · · · · · · · · · · · · · · ·
Attachment(s)  1. Notice of References Cited (PTO-892)  2. Notice of Draftperson's Patent Drawing Review (PTO-948)  3. Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date  2. Examiner's Amendment/Comment Pager No./Mail Date	ack) of	ings in the front (not the (d).	should be written on the drawing according to 37 CFR 1.121(	CFR 1.84(c	Identifying indicia such as the application number (see 37 CFR each sheet. Replacement sheet(s) should be labeled as such in
<ol> <li>Notice of References Cited (PTO-892)</li> <li>Notice of Draftperson's Patent Drawing Review (PTO-948)</li> <li>Interview Summary (PTO-413), Paper No./Mail Date</li> <li>Examiner's Amendment/Comment</li> </ol>	te the				
<ol> <li>Notice of References Cited (PTO-892)</li> <li>Notice of Draftperson's Patent Drawing Review (PTO-948)</li> <li>Interview Summary (PTO-413), Paper No./Mail Date</li> <li>Examiner's Amendment/Comment</li> </ol>					· *
2. Notice of Draftperson's Patent Drawing Review (PTO-948)  6. Interview Summary (PTO-413), Paper No./Mail Date  7. Examiner's Amendment/Comment		Patent Application	E ☐ Notice of Informal E		
Paper No./Mail Date  Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date  7. □ Examiner's Amendment/Comment			. <del>-</del>	948)	•
Paper No./Mail Date		ate	Paper No./Mail Da	340)	
A ☐ Evaminar's Commont Pagarding Paguirement for Danceit 9 ☑ Evaminar's Statement of Pagarding Pagarding		ment/Comment	7. Examiner's Amendr		
of Biological Material	ance	ent of Reasons for Allo	8. X Examiner's Statement	osit	I.   Examiner's Comment Regarding Requirement for Deposit
9. Other			9.		or biological material
STEPHEN C. ELMOF PRIMARY EXAMINE	MORE MINER	STEPHEN C. E			

10/690,137 Art Unit: 2185

## Reasons for Allowance

1. The following is an examiner's statement of reasons for allowance:

In independent claims 1, 13, 19 and 24 directed towards an apparatus including a novel architecture for set associative cache and a method of absorbing defects in a set associative cache, the following features taken in combination with the remaining limitations in the independent claims are not found in and/or are not obvious in view of the prior art of record:

Claim 1, "access control logic which manages access to the cache and is coupled to said plurality of ways, the access control logic being physically closer to the first way than to the other ways of the plurality of ways" and "wherein the access control logic controls the mux in a bank to remap any defective way in a bank to the first way in that same bank".

Claim 13, "wherein each bank includes a first way that has a physical path to said access control logic that is shorter than the respective physical paths from the other ways of the bank to said access control logic" and "wherein the access control logic controls the mux in a bank to remap any defective way in that bank to the first way in that same bank".

Claim 19, "wherein a first way in each bank has a faster access time than the access time of the other ways of the plurality of ways in each bank" and "using the mux in a bank to remap any defective way in a bank to the first way in that same bank".

Claim 24, "wherein each bank includes a first way segment that has a physical path to said access control logic that is shorter than the respective physical paths from

Application/Control Number:

10/690,137

Art Unit: 2185

Page 3

the other ways of the bank to said access control logic" and "wherein the access control logic controls the mux in a given bank to remap any defective way segment in that bank

to the first way segment in that same bank".

2. Any comments considered necessary by applicant must be submitted no later

than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on

Statement of Reasons for Allowance".

**Contact Information** 

3. Any inquiries concerning this action or earlier actions from the examiner should

be directed to Daniel Kim, reachable at 571-272-2742, on Mon-Fri from 10:00am-

6:30pm. If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor. Saniiv Shah, is also reachable at 571-272-4098.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information from

published applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see <a href="http://pair-direct.uspto.gov">http://pair-direct.uspto.gov</a>. All questions

regarding access to the Private PAIR system should be directed to the Electronic

Business Center (EBC), reachable at 866-217-9197.

STEPHEN C. ELMORE

Application/Control Number: 10/690,137 Art Unit: 2185

12-14-07

Page 4